NON-PUBLIC?: N
ACCESSION #: 8906270168
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Joseph M. Farley - Unit 2 PAGE: 1 of 3

DOCKET NUMBER: 05000364

TITLE: Reactor Trip Caused By Inadequate Procedure for Verifying Proper Insulation After Reassembly of Bearing Oil Piping
EVENT DATE: 05/27/89 LER #: 89-008-00 REPORT DATE: 06/22/89

OPERATING MODE: 1 POWER LEVEL: 088

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: D. N. Morey, General Manager - Nuclear Plant TELEPHONE: (205) 899-5156

COMPONENT FAILURE DESCRIPTION:
CAUSE: B SYSTEM: JK COMPONENT: EXC MANUFACTURER: W120
REPORTABLE TO NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

At 0906 on 5-27-89, with the unit operating at 88% power and a three percent per hour power increase in progress, the reactor tripped due to a turbine trip. The turbine trip resulted from a generator trip caused by loss of excitation. The loss of excitation was caused by the failure of the #9 exciter bearing which resulted in the failure of the shaft driven permanent magnet generator (PMG). The #9 bearing failed when contract personnel failed to install an insulating washer on one of the four bolts on a bearing oil line flange.

This event vas caused by an inadequate procedure. Although a procedure did exist for the reassembly of the bearing oil piping, there was no method for verifying proper insulation capability following reassembly. Because the bearing oil line flange bolt insulating washer was not installed as required, the #9 exciter bearing eventually failed. A new bearing and PMG stator have been installed, A procedure (FNP-0-EMP-1171.02, Generator Shaft/Pedestal Insulation Verification) has been developed to verify proper insulation of the #9 bearing.

The unit returned to power operation on 5-31-89 at 2021.

END OF ABSTRACT

Plant and System Identification

Westinghouse - Pressurized Water Reactor
Energy Industry Identification System codes are identified in the text as XX!.

Summary of Event

At 0906 on 5-27-89, with the unit operating at approximately 88% power and a three percent per hour power increase in progress, the reactor AB! tripped due to a turbine TA! trip. The turbine trip resulted from a generator TB! trip caused by loss of excitation. The loss of excitation was caused by the failure of the #9 exciter TL! bearing which resulted in the failure of the shaft driven permanent magnet generator (PMG). The #9 bearing failed when contract personnel failed to install an insulating washer on one of the four bolts on a bearing oil line flange.

Description of Event

On 5-27-89, Unit 2 was operating at 88% power and ramping up. At approximately 0858, the #9 bearing on the exciter failed. This failure led to an exciter fault. This fault tripped the generator and turbine. At 0906, an automatic reactor trip resulted per design.

Following the trip, the operators implemented FNP-2-EMP-0 (Reactor Trip or. Safety Injection) and FNP-2-ESP-0.1 (Reactor Trip Response), ensuring that the unit was safely in Mode 3 (Hot Standby). The unit was maintained in a normal stable condition.

Cause of Event

This event was caused by inadequate procedure in that no verification was performed after reassembly of the bearing oil piping to ensure that the bearing was insulated properly.

Reportability Analysis and Safety Assessment

This event is reportable because of the actuation of the reactor protection system. After the trip, the following safety systems operated as designed:

main feedwater was isolated with flow control valves and bypass valves closed, auxiliary feedwater pumps started automatically and provided flow to the steam generators, source range nuclear instrumentation automatically energized, and pressurizer heaters and spray valves operated automatically as required to maintain system pressure. There was no effect on the health and safety of the public.

Corrective Action

A new bearing and PMG stator have been installed. A procedure (FNP-0-EMP-1171.02, Generato
Shaft/Pedestal Insulation Verification) has been
developed to verify proper insulation of the #9 bearing.

Additional Information

The unit returned to power operation on 5-31-89 at 2021.

No similar LERs have been submitted by Farley Nuclear Plant.

The exciter bearing was manufactured by Westinghouse Electric Corporation.

The part number of the bearing is 613F432G01.

No other components failed during this event.

This event would not have been more severe if it had occurred under different operating conditions.

Alabama Power Company
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 868-5581

W. G. Hairston, III
Senior Vice President
Nuclear Operations

10 CFR 50.73

June 22, 1989

Docket No. 50-364

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Dear Sir:

Joseph M. Farley Nuclear Plant - Unit 2
Licensee Event Report No. LER 89-008-00

Joseph M. Farley Nuclear Plant, Unit 2, Licensee Event Report No. LER 89-008-00 is being submitted in accordance with 10CFR50.73.

If you have any questions, please advise.

Respectfully submitted,

W. G. Hairston, III

WGH,III/JAR:slc 8.26

Enclosure

cc: Mr. S. D. Ebneter
Mr. G. F. Maxwell

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